

Multilateral Research Opportunities in Ground Analogs

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The global economy forces many nations to consider their national investments and make difficult decisions regarding their investment in future exploration. International collaboration provides an opportunity to leverage other nations' investments to meet common goals. The Humans In Space Community shares a common goal to enable safe, reliable, and productive human space exploration within and beyond Low Earth Orbit. Meeting this goal requires efficient use of limited resources and International capabilities. The International Space Station (ISS) is our primary platform to conduct microgravity research targeted at reducing human health and performance risks for exploration missions. Access to ISS resources, however, is becoming more and more constrained and will only be available through 2020 or 2024. NASA's Human Research Program (HRP) is actively pursuing methods to effectively utilize the ISS and appropriate ground analogs to understand and mitigate human health & performance risks prior to embarking on human exploration of deep space destinations. HRP developed a plan to use ground analogs of increasing fidelity to address questions related to exploration missions and is inviting International participation in these planned campaigns. Using established working groups and multilateral panels, the HRP is working with multiple Space Agencies to invite International participation in a series of 30-day missions that HRP will conduct in the US owned and operated Human Exploration Research Analog (HERA) during 2016. In addition, the HRP is negotiating access to Antarctic stations (both US and non-US), the German :envihab and Russian NEK facilities. These facilities provide unique capabilities to address critical research questions requiring longer duration simulation or isolation. We are negotiating release of international research opportunities to ensure a multilateral approach to future analog research campaigns, hoping to begin multilateral campaigns in the latter facilities by 2017. Collaborative use of analog facilities and shared investment in the development of spaceflight countermeasures through multilateral campaigns or missions that leverage the global scientific community will focus high quality research and provide sufficient power to accelerate the development of countermeasures and drive sound recommendations for exploration missions. This panel will provide an overview of efforts to encourage and facilitate multilateral collaboration in analog missions or campaigns and describe the facilities currently under consideration to reach the common goal of enabling safe, reliable, and productive human space exploration.